REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

By the present amendment, claims 50, 53, and 57 have been amended and claims 52 and 56 have been cancelled.

Claim 50 has been amended to specify that the carrier is a matrix of an inorganic glass or a hybrid organic-inorganic glass. Support for this amendment is found on page 19, lines 15-16, of the application as-filed. Claim 50 has been further amended so that the matrix contains a preformed biomolecular interaction. Support for this amendment is found on page 19, lines 10-12, of the application as filed. Finally claim 50 has been amended to incorporate the subject matter of claim 52.

Claims 53 and 57 have been amended to correct their dependency since the claims upon which they previously depended have been cancelled.

The claim amendments have been made without prejudice and without acquiescing to any of the Examiner's objections. The Applicants submit that no new matter has been added to the claims as a result of these amendments and their entry is respectfully requested.

After amending the claims as set forth above, claims 50, 51, 53-55, and 57-65 are pending.

Withdrawn Rejections

The Applicants acknowledge and appreciate the Examiner's withdrawal of the previous Office Action's rejections under 35 U.S.C. § 112, second paragraph and 35 U.S.C. § 102(e).

Claim Rejections – 35 U.S.C. § 102

A. Gray *et al.*, JOURNAL OF IMMUNOLOGICAL METHODS 182 (1995) pp. 155-163

The Examiner has rejected claims 50-52, 54-56 and 61-65 under 35 U.S.C. §102(e) as being anticipated by Gray *et al.* (Journal of Immunological Methods 182 (1995) pp. 155-163). Applicants respectfully traverse this ground for rejection.

1. Summary of Gray *et al.*

Gray teaches a method of using agarose microdroplets to encapsulate cells that secrets their antibody. The agarose is covalently modified with biotin. *After cells* are encapsulated, avidin is added in excess to create a bridge to bind biotinyalted capture reagents, either goat anti-mouse antibody or antigen. After incubation at 37 °C to allow the cell to secrete its antibody, fluoresceinated complementary reporter agents (either antibody or antigen) are added to label the bound secreted antibody.

2. Gray *et al.* does not teach or suggest a preformed biomolecular interaction or a matrix of an inorganic based glass or a hybrid organic-inorganic glass having a pore size that is selected to inhibit leaching out of the biomolecular interaction or biological species thereof.

In contrast, the Applicants' claims recite a carrier comprising a biomolecular interaction that was preformed prior to entrapment and wherein the carrier is an inorganic glass or a hybrid organic-inorganic glass having a pore size that is selected to inhibit leaching out of the biomolecular interaction or biological species thereof. The matrix of Gray *et al.* is made up of agarose, an organic material not considered to be a glass, and in order for the method described therein to work, at least one of the biological species of the biomolecular interaction must be able to pass into (and therefore out of) the matrix. Accordingly, Applicants respectfully request reconsideration and withdrawal of this ground of rejection against claims 50-52, 54-56 and 61-65.

B. Weaver *et al.* U.S. Patent No. 4,959,301

The Examiner has rejected claims 50-52, 54-56 and 61-65 under 35 U.S.C. §102(e) as being anticipated by Weaver et al. (US 4,959,301). Applicants respectfully traverse this ground for rejection.

1. Summary of Weaver *et al.*

Weaver *et al.* describes the entrapment of biological entities in microdroplets. The microdroplet may be a liquid microdroplet or a gel microdroplet. The liquid microdroplets are very small volumes of predominantly liquid material, said volumes being defined by a boundary comprised of another liquid, such as a non-aqueous fluid, or by a permeability barrier such as a membrane such that the membrane is capable of retaining biological entities (see column 7, lines 6-17). The gel microdroplets are porous matrixes with a high water content. Natural and synthetic gel materials are listed in column 8, lines 56-68, of Weaver et al.

2. Weaver et al. does not teach or suggest a matrix of an inorganic based glass or a hybrid organic-inorganic glass.

In contrast, the Applicants' claims recite a carrier which is an inorganic glass or a hybrid organic-inorganic glass. The matrixes of Weaver *et al.* are microdroplets made up of organic material and are not glasses. The carriers of Weaver differ significantly from those covered by the Applicants claims, in particular with respect to their mechanical strength. Accordingly, the Applicants respectfully request reconsideration and withdrawal of this ground of rejection against claims 50-52, 54-56 and 61-65.

C. Charych et al. U.S. Patent No. 6,022,748

The Examiner has rejected claims 50-65 under 35 U.S.C. §102(e) as being anticipated by Charych et al. (US 6,022,748). Applicants respectfully traverse this ground for rejection.

1. Summary of Charych et al.

As noted by the Examiner, Charych *et al.* teaches a method and composition for direct detection of analytes using color changes that occur in immobilized biopolymeric material in response to the selective binding of analytes to their surface. The biopolymeric material may further comprise a ligand, such as a peptide, antibody, antigen, nucleic acid, biotin etc. The biopolymeric material is entrapped in a sol-gel glass. Applicants note however, that the entrapped biopolymeric material comprising a ligand is entrapped and *then* exposed to analytes that may contain a molecule that will interact with the ligand. Inherent in this method is the fact that the biomolecular interactions are not preformed and the pore size of the matrix must be such that at least one of the biological species of the biomolecular interaction must be able to pass into (and therefore out of) the matrix.

2. Charych *et al.* does not teach or suggest a preformed biomolecular interaction or a matrix having a pore size that is selected to inhibit leaching out of the biomolecular interaction or biological species thereof.

In contrast, the Applicants' claims recite a carrier comprising a biomolecular interaction that was preformed prior to entrapment and wherein the carrier has a pore size that is selected to inhibit leaching out of the biomolecular interaction or biological species thereof. In the method described in Charych et al, only one of the biological species of the biomolecular interaction is entrapped in the matrix and, in order for the method described therein to work, at least one of the biological species of the biomolecular interaction must be able to pass into (and therefore out of) the matrix. Accordingly, the Applicants respectfully request reconsideration and withdrawal of this ground of rejection against claims 50-65.

CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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